

NAEP 2005 Science Results

June 2006

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Basic Facts: National

- Tests administered January—March 2005
- 44 states and the Department of Defense schools voluntarily participated in the assessment
- More than 148,000 fourth graders, 143,000 eighth graders and 14,000 twelfth graders were tested nationwide



Basic Facts: Vermont

- In grade 4, 2016 students in Vermont, from 230 schools, participated in the NAEP Science exam
- In grade 8, 2287 students in Vermont, from 124 schools, participated
- Vermont has taken part in NAEP Science assessments since 1996 in grade 8 and since 2000 in grade 4

Since 1964, NAEP, known as the Nation's Report Card, has been the only ongoing nationally representative indicator of what American students know and are able to do in key subject areas.

National Results

Statement from Mary France Taymans, National Assessment Governing Board

The science assessment of the National Assessment of Educational Progress is not just a test of factual knowledge, though knowledge of science content is a crucial part of what NAEP tests. The NAEP science assessment framework also requires students to understand science concepts, to apply what they know to a new situation, and to use the skills and reasoning of scientific investigation.

[Results] from The Nation's Report Card are decidedly mixed. The NAEP 2005 Science assessment reports gains nationwide over the past five years at grade 4. Almost all of the improvement was by students reaching the *Basic* achievement level. This compares to flat performance at grade 4 from 1996 to 2000. It shows that efforts to improve early science education are beginning to pay off. At eighth and 12th grades, however, there has been almost no change since 2000. Achievement overall remains static at an inadequate level.

The progress at fourth grade is encouraging. The NAEP results show that 68 percent of fourth graders nationwide have reached the *Basic* achievement level, compared to 63 percent five years earlier. Gains by Black and Hispanic students have been greater than the gains by Whites, which means the gap between the races has been reduced.

In 12th grade, only 18 percent reached the *Proficient* level, a proportion that is unchanged from 2000 and down from 21 percent in 1996. We can see the problem even more clearly in the proportion of 12th-graders below *Basic*, which has gone up from 43 percent a decade ago to 46 percent last year.

Summary of National results

The national average science score in 2005 was...

- higher than in 1996 and 2000 at grade 4
- not significantly different from 1996 and 2000 at grade 8
- lower than 1996 but not statistically different from 2000 at grade 12.

To read an online Q&A about the national NAEP results, visit <http://nces.ed.gov/whatsnew/statchat/transcripts/ts5242006.asp>.

More information

NAEP Web Site:
<http://nces.ed.gov/nationsreportcard/>

Vermont Department of Education Web Site:
<http://www.state.vt.us/educ/>

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Vermont Results

Grade 4

Comparison with national results-Vermont's average scale score in 2005 was *statistically significantly higher* than the average scale score of students in public schools across the country. In addition, the percentage of Vermont students who performed at or above Proficient in 2005 (38%) was greater than that for the nation's public schools (27%).

Comparison with state performance in 2000-Neither Vermont's average scale score or the percentage of students who scored at or above Proficient in 2005 was statistically different than in 2000.

Subgroup results

- The average scale score of male students was *statistically significantly higher* than female students in 2005 (5 point differential).
- The average scale score of students eligible for free/reduced price lunch (an indicator of poverty) was *statistically significantly lower* than that of students not eligible for the program (18 point differential).

Grade 8

Comparison with national results-Vermont's average scale score in 2005 was *statistically significantly higher* than the national average scale score of students in public schools across the country. Also, the percentage of Vermont students who scored at or above Proficient in 2005 (41%) was *statistically significantly greater* than for the nation's public schools as a whole (27%).

Comparison with state performance in 1996 and 2000-Vermont's average scale score in 2005 was *statistically significantly higher* than in 2000 as well as in 1996. The percentage of students who performed at or above the Basic level was *statistically significantly higher* than in 2000, meaning performance at the lower end of the continuum improved from 2000 to 2005. However, it did not improve at the high end of the continuum (percent of students who scored Proficient or above).

Subgroup results

- The average scale score of male students was not statistically significantly different than female students in 2005 or 1996.
- The average scale score of students eligible for free/reduced price lunch (an indicator of poverty) was *statistically significantly lower* than that of students not eligible (15 point differential).

NAEP in 2007

NAEP will be testing in three subject areas in Vermont next year: Reading (Grade 4 and 8), Mathematics (Grades 4 and 8) and Writing (Grade 8). The testing window runs from January 22nd through March 2nd. Principals of schools selected for participation were notified of their specific assessment date(s) in early June. Students will spend about 90 minutes participating, including answering questions in one subject area and completing background questionnaires. Schools will receive more information about the assessments in the coming months. Please contact the Vermont NAEP Coordinator, Susan Hayes, with any questions (802) 828-5892 or susanhayes@education.state.vt.us.